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EXAMINER	
BOUTAH, ALINA A	

ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/026,488	WEINMAN, JOSEPH BERNARD	
	Examiner	Art Unit	
	Alina N. Boutah	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-23 and 25-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-23 and 25-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 October 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This action is in response to Applicant's amendment filed September 12, 2005. Claims 1-5, 7-23 and 25-30 are pending in the present application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 7-17, 23, 25, 26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al. (USPN 5,909,540) in view of Wu et al. (USPN 6,823,377).

(Amended) Regarding claim 1, Carter et al. (USPN 5,909,540) teach a system for managing at least one data object in a network in response to a request for said data object from a requesting node comprising:

a plurality of storage locations, each of said storage locations capable of storing a copy of said data object (column 7, lines 2-5);

a data manager for storing a copy of said data object in one of said storage locations (column 5, lines 19-25);

a counter for indicating a minimum number of storage locations in the network containing the data object (column 25, line 61-column 26, line 15),

wherein the data manager maintains the data object at the minimum number of storage locations in the network based on the counter (column 25, line 61 - column 26, line 15). Although the system disclosed by Carter et al. shows substantial features of the claimed invention, it fails to disclose a data request component for receiving a data request from a site and for transferring the data object to a storage location within a predetermined distance of said site. Nonetheless, these features are well known in the ad and it would have been an obvious modification of the system disclosed by Carter et al. as evidenced by Wu et al. (USPN 6,823,377).

In an analogous art, Wu et al. (USPN 6,823,377) discloses a system for distributed storage of data comprising a data request component for receiving a data request from a site and for transferring the data object to a storage location within a predetermined distance of said site (column 3, lines 50-57, column 7, lines 16-23). Given the teaching of Wu et al. (USPN 6,823,377), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by forwarding a client request to a storage device within a predetermined distance from the client. This benefits the system by reducing latency as shown in the abstract of the reference to Wu et al. (USPN 6,823,377).

Regarding claim 2, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 1. They further teach means wherein each of said storage locations in the network

possesses at least one attribute and is configured to determine a function based on said attribute (column 25, line 61 - column 26, line 15). Note that each location is a core location and the number of core locations is used in the storage of data.

Regarding claim 3, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 2. They further teach means wherein the attribute comprises a geographic location (column 19, lines 21-36).

Regarding claim 4, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 2. They further teach means wherein the function comprises a distance between said storage locations in the network (column 25, line 61 - column 26, line 15, column 19, lines 21-36). Please note that given a physical location as well as a network address, physical as well as logical distance would be known.

Regarding claim 5, Carter et al. (USPN 5,909,540) teach all the limitations as applied in claim 1. They further teach means wherein each storage location comprises a computer memory (column 25, line 61 - column 26, line 15).

Regarding claim 7, Carter et al. (USPN 5,909,440) teach all the limitations as applied to claim 1. They further teach means wherein the data manager includes storage location information (column 25, line 61 - column 26, line 15).

Regarding claim 8, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 7. They further teach means wherein the storage location information comprises at least one of a storage space data, size of data objects, last accessed time of data objects, number of accesses of data objects, or local geographic information (column 25, line 61 - column 26, line 15). Note that physical (or geographical) location is known.

(Amended) Regarding claim 9, Carter et al. (USPN 5,909,540) teach a system for managing a data object in a network with means for:

determining a minimum distance between a plurality of storage locations in a network (column 19, lines 20-35). Note that physical location is known, so minimum distance would be known as well;

creating a plurality of copies of the data object (column 25, line 61 - column 26, line 15); and

storing at least one of copy of the plurality of copies of the data object at a the at least one storage location in the network.

Although the system disclosed by Carter et al. (USPN 5,909,540) shows substantial features of the claimed invention, it fails to disclose means for selecting at least one storage location based on the minimum distance.

Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540) as evidenced by Wu et al. (USPN 6,823,377).

In an analogous ad, Wu et al. (USPN 6,823,377) discloses a system for distributed data storage with means for selecting at least one storage location based on the minimum distance (column 3, lines so-s7', column 7, lines 16-23).

Given the teaching of Wu et al. (USPN 6,823,377), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by utilizing a minimum distance in the storage of data. This benefits the system by maintaining the data at sites that can more quickly respond to client requests.

Regarding claim 10, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 9. They further teach means wherein the plurality of copies comprises at least n copies of the data object, n being a desired minimum number of copies of the data object (column 25, line 61 - column 26, line 15).

Regarding claim 11, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 9. They further teach means for determining n, n being a desired minimum number of copies of the data object', and forming at least n-l copies of the data object (column 25, line 61 - column 26, line 15).

Regarding claim 12, Carter et al. (USPN 5,909,540) teach a system for managing a data object in a network with means for:

determining an actual number of storage locations in the network that contains a copy of the data object (column 7, lines 2-5., column 25, line 61 - column 26, line 15);

determining a desired minimum number of copies of the data object (column 25, line 61 - column 26, line 15);

storing a copy of the data object at a selected storage location in the network if the actual number of storage locations in the network that contain a copy of the data object is less than the desired minimum number (column 25, line 61 – column 26, line 15).

Although the system disclosed by Carter et al. (USPN 5,909,540) shows substantial features of the claimed invention, it fails to disclose means wherein the selected storage location is separated by at least a distance d from at least one other storage locations in the network containing a copy of the data object, d being a predetermined minimum distance.

Nonetheless, these features are well known in the ad and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540) as evidenced by Wu et al. (USPN 6,823,377).

In an analogous art, Wu et al. discloses a system for distributed data storage wherein the selected storage location is separated by at least a distance d from at least one other storage locations in the network containing a copy of the data object, d being a predetermined minimum distance (column 3, lines 50-57, column 7, lines 16-23).

Given the teaching of Wu et al. (USPN 6,823,377), a person having ordinary skill in the ad would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by utilizing a minimum distance in the storage of data. This

benefits the system by maintaining the data at sites that can more quickly respond to client requests and ensure that the data is evenly distributed geographically.

Regarding claims 13 and 16, although the system disclosed by Carter et al. (USPN 5,909,540) (as applied to claims 12 and 15, respectively) shows substantial features of the claimed invention, it fails to disclose means for calculating the predetermined minimum distance d. Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540) as evidenced by Wu et al. (USPN 6,823,377).

In an analogous ad, Wu et al. (USPN 6,823,377) discloses a system for the distributed storage of data with means for calculating the predetermined minimum distance d (column 3, lines 50-57, column 7, lines 16-23). Given the teaching of Wu et al. (USPN 6,823,377), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by utilizing a minimum distance in the storage of data. This benefits the system by maintaining the data at sites that can more quickly respond to client requests and ensure that the data is evenly distributed geographically.

Regarding claims 14 and 17, Carter et al. (USPN 5,909,440) teach all the limitations as applied to claims 13 and 17, respectively. They further teach means for determining the geographic location of the storage location (column 19, lines 21-35).

Claim 15 is equivalent to claim 12 except that it further required the receipt of a modified data object and the replacement of previously stored data objects with the modified object. This is well known in the art and would be an obvious modification to the system of Carter et al. (USPN 5,909,540). A person having ordinary skill in the ad would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by replacing previously stored data with newly modified data. This benefits the system by ensuring that the stored data is the most recent and up to date.

(Amended) Regarding claim 23, Carter et al. (USPN 5,909,540) teach a system for managing a data object in a network with means for:

determining a plurality of storage locations in a network containing the data object (column 7, lines 2-5, column 25, line 61 - column 26, line 15);

broadcasting a deletion message to said plurality of storage locations (column 31, lines 10-31); and

deleting the data object at each determined storage location (column 29, lines 23-31).

However, Cater et al. fail to disclose means for broadcasting a deletion message to all storage locations via a multicast protocol. Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540).

A person having ordinary skill in the ad would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by multicasting delete

messages to all storage locations. This benefits the system by allowing all instances of an object to be deleted in the event that it is no longer available from its original provider.

Regarding claim 25, although the system disclosed by Carter et al. (USPN 5,909,540) (as applied to claim 24) shows substantial features of the claimed invention, it fails to disclose means wherein said multicast protocol is Protocol Independent Multicast-sparse Mode (PIM-SM). Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540).

A person having ordinary skill in the ad would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by utilizing PIM-SM for multicast. This is a protocol commonly used for sending these types of messages and would benefit the system by enabling the multicasting of deletion messages.

Regarding claim 26, Carter et al. (USPN 5,909,540) teach a system for managing a data object in network with means for:

receiving a request to access a data object from a user site;

generating a copy of the data object (column 5, lines 19-33, column 25, lines 61-64);

storing the copy of the data object at a storage location (column 25, line 61 - column 26, line 15).

Although the system disclosed by Carter et al. (USPN 5,909,540) shows substantial features of the claimed invention, it fails to disclose means wherein the storage location is within a predetermined distance from the user site.

Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540) as evidenced by Wu et al. (USPN 6,823,377).

In an analogous art, Wu et al. (USPN 6,823,377) discloses a system for distributed data storage wherein the storage location is within a predetermined distance from the user site (column 3, lines 50-57, column 7, lines 16-23).

Given the teaching of Wu et al. (USPN 6,823,377), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by utilizing a predetermined distance in the storage of data. This benefits the system by maintaining the data at sites that can more quickly respond to client requests and ensure that the data is evenly distributed geographically.

(Amended) Regarding claim 30, Carter et al. (USP; 5,909,540) teach a server for maintaining information on data in network nodes comprising:

a node table for storing node information (column 10, line 36 - column 11, line 21, column 19, lines 21-35);

a node distance table for storing distance information between nodes (column 10, line 36 - column 11, line 21, column 19, lines 21-35).

an object copy table for maintaining data copy information (column 10, line 36 - column 11, line 21; column 19, lines 21-35, column 25, line 61 - column 26, line 15);

an object data and rules table for storing information on rules of each data object (column 10, line 36 - column 11, line 21, column 1 9, lines 21-35).

Claims 18-22 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al. (USPN 5,909,540) in view of Wu, in further view of Kuroki et al. (USPN 5,960,176).

Regarding claim 18, Carter et al. (USPN 5,909,540) teach a system for managing a data object in a network with means for:

determining an actual number of storage location in the network that contain a copy of the data object (column 25, line 61 - column 26, line 15);

determining a number of copies of the data object (column 25, line 61 - column 26, line 15).

Although the system disclosed by Carter et al. (USPN 5,909,540) shows substantial features of the claimed invention, it fails to disclose a maximum number and deleting a copy of the data object from a storage location if the actual number of copies of the data is greater than the maximum number of copies of the data object.

Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540) as evidenced by Kuroki et al. (USPN 5,960,176).

In an analogous art, Kuroki et al. (USPN 5,960,176) discloses a system for data storage with means for deleting a copy of the data object from a storage location if the actual number of is greater than the maximum number of copies of the data object (column 6, lines 15-21). Given the teaching of Kuroki et al. (USPN 5,960,176), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al.

(USPN 5,909,540) by deleting copies when the number of copies exceeds a maximum. This benefits the system by avoiding overload of the system memory with unneeded copies.

Regarding claim 19, although the system disclosed by Carter et al. (USPN 5,909,540) (as applied to claim 18) shows substantial features of the claimed invention, it fails to disclose means wherein the maximum number of copies of the data object is equal to n+x, n being a desired minimum number of copies of the data object and x being a maximum additional number of copies of the data object.

Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540) as evidenced by Kuroki et al. (USPN 5,960,176).

In an analogous ad, Kuroki et al. (USPN 5,960, 176) discloses a system for data storage wherein the maximum number of copies of the data object is equal to n+x, n being a desired minimum number of copies of the data object and x being a maximum additional number of copies of the data object (column 6, lines 15-21).

Given the teaching of Kuroki et al. (USPN 5,960,176), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by deleting copies when the number of copies exceeds a maximum. This benefits the system by avoiding overload of the system memory with unneeded copies.

Regarding claim 20, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 18. They further teach means for: determining an attribute of each storage location containing a copy of the data object (column 25, line 61 - column 26, line 15);

selecting the copy of the data object based on the attribute of the storage location containing the data object (column 25, line 61 - column 26, line 15);

deleting the selected copy of the data object (column 29, lines 23-31).

Regarding claim 21, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 20. They further teach means wherein the attribute comprises at least one of storage space data, size of the stored data object, last accessed time of the data object, number of accesses of the data object, or local geographic information (column 19, lines 21-35).

Regarding claim 22, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 18. They further teach means for determining the geographical location of the storage location (column 19, lines 21-35).

(Amended) Regarding claim 27, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 26. They further teach means for:

determining the number of a plurality of storage locations in the network containing a copy of the data object (column 7, lines 2-5);

determining a desired minimum number of copies of the data object (column 25, line 61 - column 26, line 15);

selecting a storage location in the network containing a copy of the data object (column 25, line 61 - column 26, line 15);

deleting the copy of the data object at the selected storage location (column 29, lines 23-31).

Although the system disclosed by Carter et al. (USPN 5,909,540) shows substantial features of the claimed invention, it fails to disclose means for deleting when the actual number of storage locations containing a copy of the data object is greater than the desired minimum number of copies.

Nonetheless, these features are well known in the ad and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540) as evidenced by Kuroki et al. (USPN 5,960,176).

In an analogous art, Kuroki et al. (USPN 5,960,176) discloses a system for distributed data storage with means for deleting when the number of the plurality of storage locations containing a copy of the data object is greater than the desired minimum number of copies (column 6, lines 15-21).

Given the teaching of Kuroki et al. (USPN 5,960,176), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by deleting copies when the number of copies exceeds a given number. This benefits the system by avoiding overload of the system memory with unneeded copies.

Regarding claim 28, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 27. They further teach means wherein the selecting comprises determining an attribute of the storage locations containing a copy of the data object (column 19, lines 21-35).

Regarding claim 29, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 28. They further teach means wherein the attribute comprises at least one of storage space data, size of the stored data object, last accessed time of the data object, number of accesses of the data object, or local geographic information (column 19, lines 21-35).

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alina N. Boutah whose telephone number is 571-272-3908. The examiner can normally be reached on Monday-Friday (9:00 am - 5:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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BUNJOB JAROENCHONWANIT
PRIMARY EXAMINER